

Methodology for the Development of the 2002 Section 303(d) List in Missouri



**Missouri Department of Natural Resources
Division of Environmental Quality
Water Pollution Control Program**

Clean Water Act Requirements

- **The federal Clean Water Act**
- **U.S. EPA Rules**
- **Public Notice and Reporting Requirements**

Federal Clean Water Act Requirements

- **States Must Prepare a List of Impaired Waters for EPA Review**
- **States Must Prepare a Document to Explain How the List is Constructed**

The Methodology Document

- **Procedures and methods used to collect Water Quality Data**
- **Definition of All Existing and Readily Available Water Quality Data Sources**
- **Data Quality Considerations**
- **Listing Considerations**

Procedures and Methods Used to Collect Water Quality Data

- **Department Monitoring**
- **Coordination with Other
Monitoring Efforts in Missouri**
- **Laboratory Analytical Support**
- **Networks and Programs**

Water Quality Monitoring Networks and Programs

- Fixed Station Network
- Intensive Surveys
- Toxics Monitoring
- Biological Monitoring
- Fish Tissue Analysis
- Volunteer Water Quality Monitoring

Identification of All Existing and Readily Available Water Quality Data Sources

- Missouri Department of Natural Resources
- Missouri Department of Conservation
- Neighboring States
- U. S. Geological Survey
- U. S. Environmental Protection Agency
- U. S. Army Corp of Engineers
- University of Missouri
- Crowder College
- Regulated Companies and Municipalities
- Trained, qualified volunteers

Data Quality Considerations

- **Quality Assurance / Quality Control Programs**
- **Other Data Quality Considerations**

Other Data Quality Considerations

- Data Age
- Data Type, Amount and Information Content
- Data Quality Codes

Data Quality Levels

- Qualitative Data (not for listing)
 - Level One, screening
- Quantitative Data (for listing)
 - Level Two, chemical
 - Level Three, multi-faceted
 - Level Four, intensive

How Water Quality Data Is Evaluated to Determine Whether or Not Waters Are Impaired

- **Beneficial Uses**
- **Water Quality Specific Criteria**
- **Water Quality General Criteria**
- **Antidegradation**
- **Data Type**
- **Data Quality**
- **Compliance with Water Quality Standards**

Beneficial Uses

Irrigation

**Human Health
Protection**

**Storm/Flood Water
Storage and Attenuation**

**Livestock/Wildlife
Watering**

**Whole-Body-
Contact Recreation**

**Habitat for Resident and
Migratory Species**

Cold-Water Fishery

**Boating and
Canoeing**

**Aesthetic Values and
Uses**

Cool-Water Fishery

**Drinking Water
Supply**

**Hydrologic Cycle
Maintenance**

**Protection of
Aquatic Life**

**Industrial
Process/Industrial
Cooling**

Water Quality Specific Criteria

- **CHEMICAL - Toxic & Carcinogenic**
- **BACTERIA - Fecal Coliform**
- **TEMPERATURE - Upper Limit & Change**
- **pH - Alkalinity & Acidity**
- **DISSOLVED GASES - Oxygen & Others**
- **ODOR / COLOR - Algae, Solids, etc.**
- **BIOLOGICAL - Toxicity Tests & Biological Integrity**

Water Quality General Criteria

- Free from putrescent, unsightly, or harmful bottom deposits
- Free from excessive oil, scum, and floating debris
- Free from unsightly color or offensive odor
- No health hazard to humans or wildlife
- Free from changes impairing natural biological community
- Free from solid waste (i.e. JUNK)

Antidegradation

- **Tier 1: Public and Environmental Health**
- **Tier 2: Accommodation for important Economic and Social Development**
- **Tier 3: Outstanding Resource Waters**

Water Quality Impairment Designations

- **Full Attainment**
- **Attainment Threatened**
- **Partial Attainment**
- **Non-Attainment**

303(d) Listing Considerations

- **Adding to the Existing List or Expanding the Scope of Impairment to a Previously-Listed Water**
- **Deleting From the Existing List or Decreasing the Scope of Impairment to a Previously-Listed Water**
- **Placement of Waters Within the Four 303(d) List Categories**

Placement of Waters Within the Four 303(d) List Categories

- **PART ONE: Pollutant, needs TMDL**
- **PART TWO: Pollution, no TMDL**
- **PART THREE: TMDL complete, not yet meeting water quality standards**
- **PART FOUR: Expected to meet standards before next listing cycle**

Prioritization of Waters for TMDL Development

- **HIGH:** Human Health Risk
Multiple Use Impairments
Actual Impairment
- **MEDIUM:** Actual Impairment
Threatened Impairment
- **LOW:** Threatened Impairment
Aesthetic Impairment
- **DEGREE OF TREATABILITY**

Resolution of Interstate/ International Disagreements

- Review of Data from Bordering States
- Missouri Will Share Its Data with Bordering States
- Changes to Missouri 303(d) List Can Be Made Upon Evaluation of This Data

Opportunities for Public Involvement

- **Public Notice for 2002 Methodology Document AND Request for Candidate Waters (March 30 to May 29, 2001)**
- **Public Notice for Draft 2002 List (Summer 2001)**
- **Public Participation Meetings for Draft List (Summer 2001)**
- **Public Comment to Clean Water Commission (Fall 2001)**

Questions or Comments?

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